

**Listing of Claims:**

1.-5. (Canceled)

6. (Previously presented) Radiotherapy apparatus comprising:

a two-dimensional imager responsive to imaging radiation and generating a two-dimensional imaging output;

computing means for processing the imaging output to produce tomography data including a plurality of intersecting sectional views, each sectional view being an image containing pixels with values derived from a plurality of voxels in the tomography dataset which are disposed transverse to the corresponding section; and

a therapeutic source controllable in response to feedback from the tomography data and producing therapeutic radiation.

7. (Previously presented) Radiotherapy apparatus according to claim 6 in which the plurality of voxels are disposed orthogonal to the corresponding section.

8. (Original) Radiotherapy apparatus according to claim 6 in which the plurality of voxels are disposed linearly.

9. (Previously presented) Radiotherapy apparatus according to claim 6 in which between 5 and 20 voxels are employed.

10. (Previously presented) Radiotherapy apparatus according to claim 6 in which between 7 and 15 voxels are employed.

11. (Previously presented) Radiotherapy apparatus according to claim 6 in which about 10 voxels are employed.

12. (Previously presented) Radiotherapy apparatus according to claim 6 in which there is a display means for showing the sectional views.

13. (Original) Radiotherapy apparatus according to claim 12 in which the therapeutic source is controlled on the basis of instructions from an operator, given via an input means.

14. (Previously presented) Radiotherapy apparatus according to claim 13 in which the input means is correlated to the display means.

15. (Previously presented) Radiotherapy apparatus according to claim 14 in which the correlation is via a superimposed image on the display means which is moveable in response to operation of the input means.

16. (Original) Radiotherapy apparatus according to claim 15 in which the superimposed image is derived from one of a previous investigation and a treatment of the patient.

17. (Original) Radiotherapy apparatus according to claim 15 in which the superimposed image is an outline.

18. (New) Radiotherapy apparatus according to claim 6, in which the sectional views are arranged orthogonally.

19. (New) Radiotherapy apparatus according to claim 6, in which at least three sectional views are prepared.

20. (New) Radiotherapy apparatus according to claim 19, in which the views intersect substantially at the isocenter of the therapeutic source.